

Claims

[c1] Claims

1. A disk drive enclosure having a front, a rear, a left, a right, a top, and a bottom, the enclosure comprising a plurality of frames substantially parallel to each other and extending from the front of the enclosure toward the rear of the enclosure;

each frame having a rear, each frame comprising a plurality of disk drives, the disk drives substantially coplanar, each frame comprising a printed circuit board extending to the disk drives and extending to the rear of the frame and having a connector;

each frame printed circuit board electrically connected with the plurality of disk drives by means of respective drive connectors;

the enclosure further comprising a planar board extending from left to right, and having a respective connector for each frame connector connected to the each frame connector;

each frame printed circuit board comprising data concentrator logic such that the number of pins at the frame's rear connector is less than the sum of the number of pins at the drive connectors of the printed circuit

board.

[c2] 2. The enclosure of claim 1 wherein the planar board extending from left to right connects to the rear of the enclosure by means of at least one connector and may be removed from the rear of the enclosure by disconnecting the connector.

[c3] 3. A method for use with a disk drive enclosure having a front, a rear, a left face, a right face, a top, and a bottom, the enclosure containing a multiplicity of disk drives each having a platter spinning in a plane parallel to the left and right faces, the method comprising the steps of:

detecting a failure or suspected failure in one of the drives; the enclosure from the front;

selecting one from among a plurality of carriers, the selected one of the carriers carrying the failed or suspected-failed drive and also carrying at least one additional drive but less than all of the multiplicity of disk drives;

extracting the selected carrier from the enclosure by sliding it toward the front of the enclosure;

removing the failed or suspected-failed drive from the selected carrier;

inserting a different drive to the selected carrier; and returning the selected carrier to the enclosure by sliding

it toward the rear of the enclosure.

- [c4] 4. The method of claim 3 wherein the step of removing the failed or suspected-failed drive from the selected carrier is performed by moving the drive parallel to the carrier.
- [c5] 5. The method of claim 4 wherein the step of removing the failed or suspected-failed drive from the selected carrier is performed by moving the drive parallel to the carrier and upwards from the carrier.
- [c6] 6. The method of claim 4 wherein the step of removing the failed or suspected-failed drive from the selected carrier further comprises releasing a snap latch.
- [c7] 7. The method of claim 3 wherein the step of inserting a different drive to the selected carrier further comprises snapping the drive into place.